ABB i-bus® KNX
Raum-Controller Basis Devices, RC/A
Product Manual

ABB i-bus® KNX
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General

1 General

Modern building installation enables a high degree of functionality and simultaneously complies with increased security requirements. Due to the structured installation of the electrical components, it is possible to carry out rapid planning, installation and commissioning as well as achieve cost benefits during operation.

The modular design of the Room Controller is flexibly adapted to the required functionality. The distributed installation concept makes the functionality directly available in the room and ensures short installation and commissioning times. Fire loads are reduced due to shorter cable routes that result.

1.1 Product and functional overview

The Room Controller consists of a basis device in which up to four or eight modules can be inserted. The basis device controls the module functions and communicates using the ABB i-bus® KNX. Any module type can be plugged into every module slot. The inserted module is automatically detected, supplied with energy and, dependent on the type, connected to the supply voltage if required. An overview of the available modules is available under

The flat design of the Room Controller enables underfloor installation or installation in suspended ceilings.

In contrast to many KNX devices, the Room Controller does not generate its internal supply voltage from the bus voltage, but rather from the incoming mains supply. The advantage is that the device can continue to function even when the KNX bus is unavailable and is immediately ready for manual operation. The module function and wiring checks can be undertaken directly after installation in the unprogrammed state.

1.2 Use of the product manual

This product manual provides you with detailed technical information relating to the device, its installation and programming.

This manual is divided into the following sections:

Chapter 1	General
Chapter 2	Device technology
Chapter 3	Commissioning
Chapter 4	Planning and application
Chapter 5	Overview of the modules and accessories
Chapter A	Appendix

1.2.1 Structure of the product manual

First of all, the appropriate parameters for the different Room Controllers are explained in chapter 3. Directly following the parameter descriptions for each Room Controller, you can find descriptions for the available communication objects.

Furthermore, you will find application examples for effective device usage in the chapter 4.

Chapter 5 provides you with an overview of the modules and accessories for the Room Controllers. The description of the modules and their functions can be found in the relevant product manuals.

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General

1.2.2   **Note**

Notes and safety instructions are represented as follows in this manual:

Note
Tips for usage and operation

Examples
Application examples, installation examples, programming examples

Important
These safety instructions are used as soon as there is danger of a malfunction without risk of damage or injury.

Caution
These safety instructions are used if there is a danger of damage with inappropriate use.

⚠ Danger
These safety instructions are used if there is a danger for life and limb with inappropriate use.

⚠ ⚡ Danger
These safety instructions are used if there is a danger to life with inappropriate use.

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1.3   Design of the basis device

The basis device has a robust design with degree of protection IP 54 (splash proof protection). The housing is halogen-free. It can be opened quickly and easily via quick-release bayonet locks. Cables can be inserted into the housing via cable entries. Open cable entries are supplied with the modules.

With an overall height of 50 mm, the Room Controller is suitable for underfloor installation. All the connections inside the device are carried out via screw terminals with a plug-in connection.

1.4   Module configuration

Connection terminals
(screw terminals with plug-in connection)

Mains supply

Control cable contacts

ABB i-bus® KNX
General
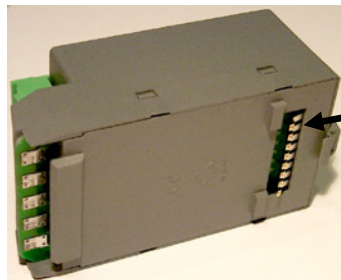
1.5	**Special features**

The Room Controller is one of the latest generation of KNX devices and has some special characteristics. Here are the important features of the product at a glance:

Flexibility and extendibility

The modular concept enables the rapid adaptation of the device function to changes both during planning and operation. Each Room Controller is only a single bus device.

Manual operation and LED display

The manual operation facility is an important element of the installation concept: After switching on the voltage, a test can immediately be performed to determine whether the wiring is functioning correctly. The manual mode also functions without bus voltage and without the device being programmed beforehand.

Superior functionality

Each individual module type has an extensive functional scope. Every function can be activated individually. The parameterisation in ETS remains clear and comprehensible.

Complete range

The comprehensive selection of modules enables a universal concept and simplifies the planning stage.

Robust technology

The enclosed and mechanically robust housing (IP 54) offers protection against dirt and splashing water.

Flat design

With a height of 50 mm, the device is ideally suited to installation underfloor and in false ceilings.

Quick and simple installation

The modules are inserted quickly and without using tools. The device connection via high-quality plug-in terminals with screw connection makes installation simple.

ABB i-bus® KNX
Device technology

2 Device technology

2.1 RC/A 4.2: Room Controller 4-fold
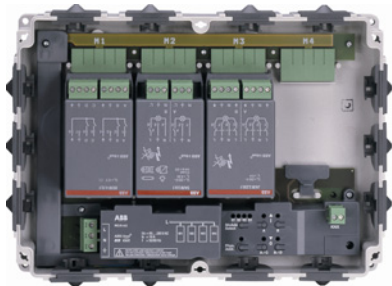
RC/A 4.2 (open)

2CDC 073 075 S0009

The Room Controller Basis Device RC/A 4.2 can accept up to 4 plug-in modules. It controls their function and communicates as a bus device via the ABB i-bus® KNX.

Any module type can be plugged into every module slot. The inserted module is detected automatically and linked with the internal supply voltage and incoming mains supply if necessary.

The mains supply is connected to the device using a single phase (L, N and PE).

The manual operation facility enables an immediate function test even when bus voltage is not applied.

2.1.1 Technical data

Supply/Incoming supply	Voltage range	85…265 V AC, 50/60 Hz
	Internal power consumption	Max. 3 W (without modules)
Bus connection	ABB i-bus® KNX	
	Bus current consumption	< 10 mA
Module slots	Number	4 (M1... M4) for insertion of the required module types
Operating and display elements	LED red and button	For assignment of the physical address
	4 yellow LEDs and push buttons	For status display and manual operation of the module function
	1 module selector switch and 4 LEDs	For selecting the module slot to be operated
Connections	Mains supply	3-pole, plug-in screw terminals Conductor cross-section: 0.5…4.0 mm^2
	KNX	2-pole, plug-in screw terminals
Enclosure	IP 54	Compliant to EN 60529
Temperature range	Operation	-20 °C…45 °C
	Storage	-25 °C…55 °C
	Transport	-25 °C…70 °C
Ambient conditions	Max. humidity	93 %, no condensation allowed
Design	Type of installation	Surface mounted device, screw fixing
	Housing/colour	Plastic, grey, halogen free
	Dimensions (H x W x D)	200 x 275 x 50 mm
	Weight	0.900 kg
Approvals	KNX to EN 50 090-1, -2	Certification
CE mark	In accordance with the EMC guideline and low voltage guideline	

ABB i-bus® KNX
Device technology

Application program	Maximum number of communication objects	Maximum number of group addresses	Maximum number of associations
Room Controller modular 4f2/1.0	125	254	255

Note
Programming requires ETS3.0 or higher.
If ETS3 is used, a *.VD3 or higher type file must be imported. The application program is available in the ETS3 at *ABB/Room automation, Room Controller*.
The devices do not support the closing function of a *BCU code* (ETS3) that can assign the devices using the ETS. This function has no effect on the device. Data can still be read and programmed.

ABB i-bus® KNX
Device technology

2.1.2   **Connection schematic RC/A 4.2**
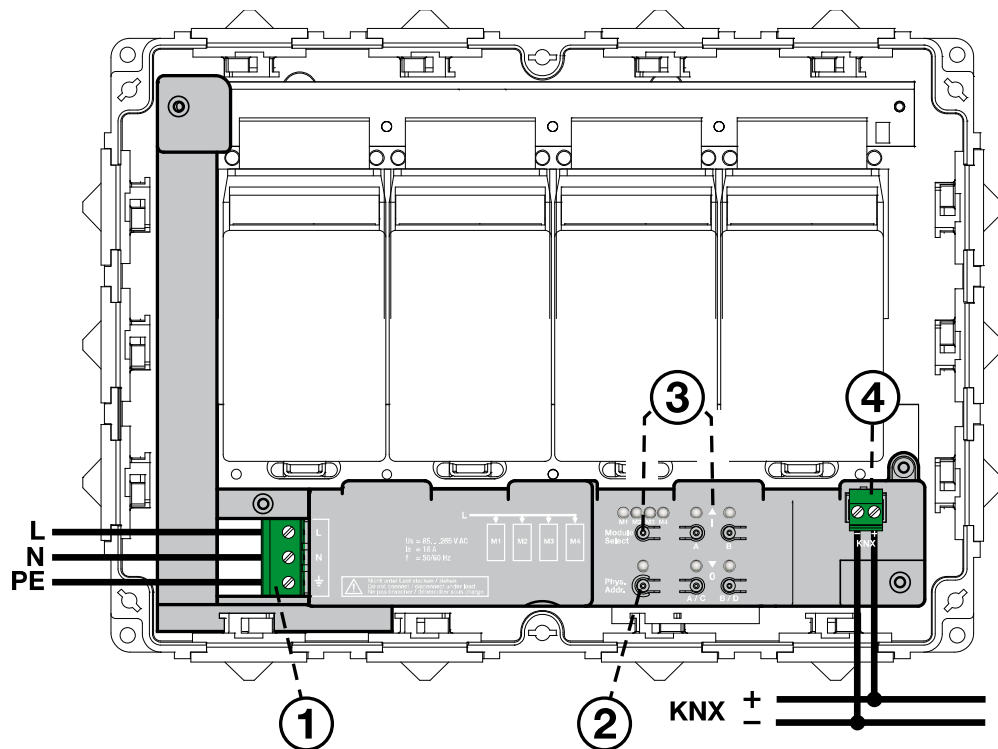
1   Incoming supply and power supply

The mains supply is a single phase via a screw terminal with plug-in connection (50/60 Hz). It is then routed to the modules. The internal power supply for the Room Controller and the modules is generated from the mains supply. The device is ready for operation after connecting the mains supply.

2   Programming button and LED

Please note that the programming button and LED only function when the supply voltage is connected. Background: The device is not supplied from the bus, but rather from the mains supply.

3   Manual operation and LED display

To operate the module functions manually, the module must first be selected via the rotary selector switch (Module Select). The module can then be operated via push buttons and the status is displayed via an LED.

If a module is not selected, the state of the bus voltage can be indicated with the aid of the push buttons:
LED permanently on → Bus voltage OK
LED flashes → Bus voltage not OK

For further information see: Manual operation and LED display, page 34

4   Connection to the ABB i-bus® KNX

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Device technology

2.1.3 Dimensional drawing RC/A 4.2

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Device technology
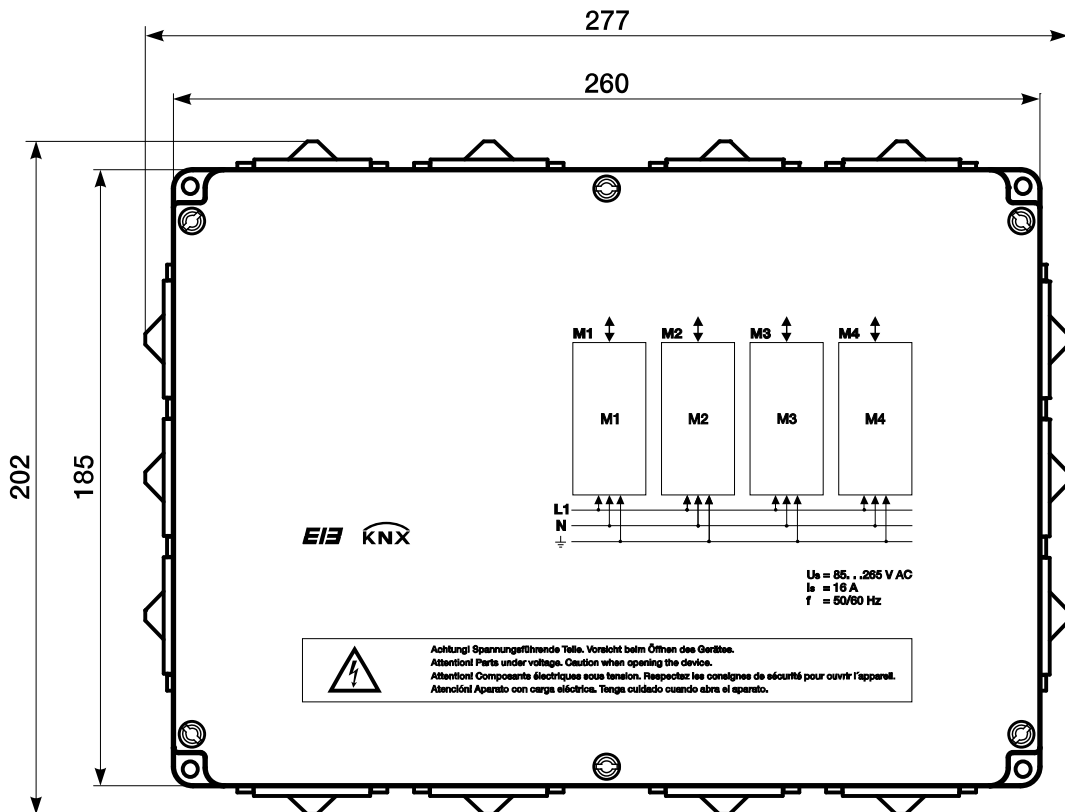
2.2 RC/A 8.1: Room Controller 8-fold with optional auxiliary supply
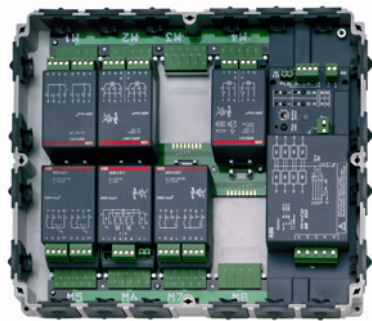
RC/A 8.1 (open)

2CDC 073 053 F0004

The Room Controller Basis Device RC/A 8.1 can accept up to 8 plug-in modules. It controls their function and communicates as a bus device via the ABB i-bus® KNX.

Any module type can be plugged into every module slot. The inserted module is detected automatically and linked with the internal supply voltage and incoming mains supply if necessary.

The mains supply is connected to the device using a 3-phase supply.

The manual operation facility enables an immediate function test even when bus voltage is not applied.

2.2.1 Technical data

Supply / Incoming supply	With 3-phase connection	90…264 V AC, 50/60 Hz
	With 2-phase connection	90…264 V AC, 50/60 Hz
	With 1-phase connection	190…264 V AC, 50/60 Hz
	Optional incoming supply	24 V DC, for wiring the direct supply to the 24 V DC modules
	Optional auxiliary supply	10…28 V DC, as a backup supply or for mains-independent operation
	Internal power consumption	Max. 4 W (without modules)
Bus connection	ABB i-bus® KNX	
	Bus current consumption	< 10 mA
Module slots	Number	8 (M1... M8) for insertion of the required module types
Operating and display elements	LED red and button	For assignment of the physical address
	4 yellow LEDs and push buttons	For status display and manual operation of the module function
	1 rotary selector switch	For selecting the module slot to be operated
Connections	Supply voltage / mains supply	5-pole, plug-in screw terminals
	KNX	2-pole, plug-in screw terminals
	Optional incoming supply	4-pole, plug-in screw terminals
	Optional auxiliary supply	2-pole, plug-in screw terminals
	Connection cross-sections	Supply: 0.5…4.0 mm^2 Other: 0.2…2.5 mm^2 stranded 0.2…4.0 mm^2 single core
Enclosure	IP 54	Compliant to EN 60529
Temperature range	Operation	-5 °C…+45 °C
	Storage	-25 °C…+55 °C
	Transport	-25 °C…+70 °C
Ambient conditions	Max. humidity	93 %, no condensation allowed
	Operation only in enclosed rooms	
Design	Type of installation	Surface mounted device, screw fixing
	Housing/colour	Plastic, grey, halogen free
	Dimensions (H x W x D)	270 x 316 x 50 mm
	Weight	1.48 kg
Approvals	KNX to EN 50 090-1, -2	Certification
CE mark	In accordance with the EMC guideline and low voltage guideline	

ABB i-bus® KNX
Device technology

| Application program	Maximum number of communication objects	Maximum number of group addresses	Maximum number of associations
Room Controller modular 8f/2.0	246	254	255

Note
Programming requires ETS3.0 or higher.
If ETS3 is used, a *.VD3 or higher type file must be imported. The application program is available in the ETS3 at *ABB/Room automation, Room Controller*.
The devices do not support the closing function of a *BCU code* (ETS3) that can assign the devices using the ETS. This function has no effect on the device. Data can still be read and programmed.

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Device technology

2.2.2 **Connection schematic RC/A 8.1**

1 **Incoming supply and power supply**

The mains supply can be 1-phase, 2-phase or 3-phase (50/60 Hz). The internal power supply for the device and the inserted modules is generated from the mains supply. It is then routed to the modules. Operation on a 3-phase 230/400 V mains supply is permitted.

The device power supply is assured as long as at least one 230 V phase is available.Multiple connection of the same phase is not allowed, if it is protected by several miniature circuit-breakers (danger of overload of the neutral conductor!).

In networks with a mains voltage of less than 190 V AC, the 12 V DC auxiliary supply (3) is necessary when a 1-phase incoming supply is used.

**For further information see: **

ABB i-bus® KNX
Device technology

2 **Connection to the ABB i-bus® KNX**

3 **Optional auxiliary supply**

If required, it is also possible to connect 12 V DC to ensure the internal power supply for the device. The device function is fully retained on failure of the 110/230 V AC mains voltage. The wiring has to be carried out with the same insulation as mains voltage.

4 **Additional incoming supply 24 V DC**

Some modules, e.g. 24 V DC blind actuators, require a special incoming supply which is connected directly to the modules. To make the wiring simpler, it is possible to connect a 24 V DC supply here (terminal 5/6) which is then led directly along connecting cables to the modules via terminals 9/10. Terminals 7/8 are used for looping through the 24 V DC supply. The connecting cable is supplied with the modules.
The terminals can carry a maximum continuous current of 8 A.

5 **Manual operation and LED display**

To operate the module functions manually, the module must first be selected via the rotary selector switch (Module Select). The module can then be operated via push buttons and the status is displayed via an LED

For further information see: Manual operation and LED display, page 33

If a module is not selected, the state of the bus voltage can be indicated with the aid of the push buttons:
LED permanently on → Bus voltage OK
LED flashes → Bus voltage not OK

6 **Programming button and LED**

Please note that the programming button and LED only function when the supply voltage is connected. Background: To ensure that the power consumption of the bus remains low, the device is not supplied by the bus.

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Device technology

2.2.3 Dimensional drawing RC/A 8.1
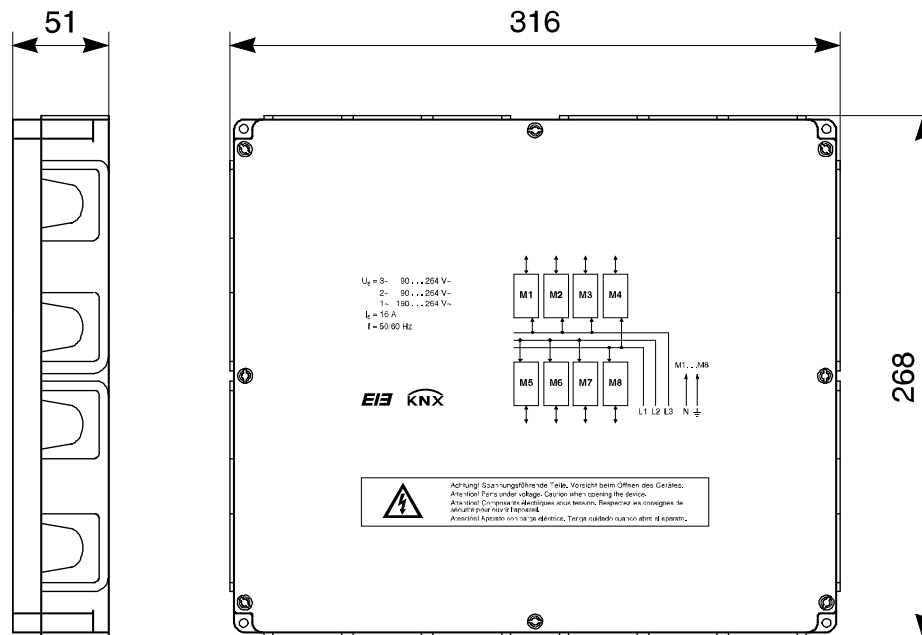
2.2.4 Overview of the module slots

The device has four or eight module slots which are numbered as M1 to M4 or M8 respectively and when inserted, the module is connected to the mains supply voltage provided that the module requires the voltage for operation.

On devices with 8 module slots (RC/A 8.1 and RC/A 8), a module is permanently assigned to one of the three phases via the module slot.

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Device technology
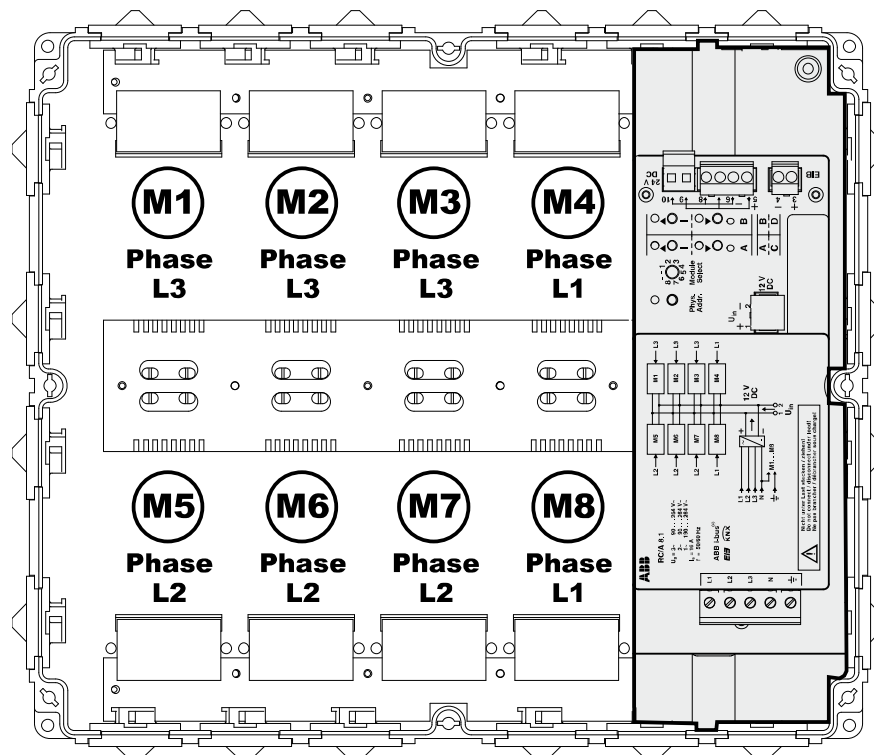
2.3 RC/A 8.2: Room Controller 8-fold
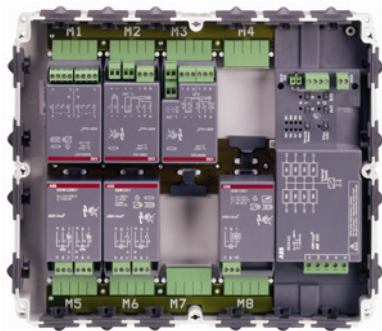
2CDC 073 125 F0009

RC/A 8.2 (open)

The Room Controller Basis Device RC/A 8.2 can accept up to 8 plug-in modules. It controls their function and communicates as a bus device via the ABB i-bus® KNX.

Any module type can be plugged into every module slot. The inserted module is detected automatically and linked with the internal supply voltage and incoming mains supply if necessary.

The mains supply is connected to the device using a 3-phase supply.

The manual operation facility enables an immediate function test even when bus voltage is not applied.

2.3.1 Technical data

Incoming supply	3-phase: L1, L2, L3, N and PE	For supplying module slots M1…M8
	Voltage range	85…265 V AC
	Optional incoming supply	24 V DC, for wiring the direct supply to the 24 V DC modules
Supply	Via phase L1	
	Voltage range	85…265 V AC, 50/60 Hz
	Internal power consumption	Max. 4 W (without modules)
Bus connection	ABB i-bus® KNX	
	Bus current consumption	< 10 mA
Module slots	Number	8 (M1… M8) for insertion of the required module types
Operating and display elements	LED red and button	For assignment of the physical address
	4 yellow LEDs and push buttons	For status display and manual operation of the module function
	1 module selector switch and 8 LEDs	For selecting the module slot to be operated
Connections	Incoming supply	5-pole, plug-in screw terminals Conductor cross-section: 0.5…4.0 mm²
	KNX	2-pole, plug-in screw terminals
	Optional incoming supply	4-pole, plug-in screw terminals Conductor cross-section: 0.2…2.5 mm² stranded 0.2…4.0 mm² single core
Enclosure	IP 54	Compliant to EN 60529
Temperature range	Operation	-20 °C…+45 °C
	Storage	-25 °C…+55 °C
	Transport	-25 °C…+70 °C
Environmental conditions	Max. humidity	93 %, no condensation allowed
	Operation only in enclosed rooms	
Design	Type of installation	Surface mounted device, screw fixing
	Housing/colour	Plastic, grey, halogen free
	Dimensions (H x W x D)	270 x 316 x 50 mm
	Weight	1.45 kg
Approvals	KNX to EN 50 090-1, -2	Certification
CE mark	In accordance with the EMC guideline and low voltage guideline	

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Device technology

Application program	Maximum number of communication objects	Maximum number of group addresses	Maximum number of associations
Room Controller modular 8f2/1.0	245	254	255

Note
Programming requires ETS3.0 or higher.
If ETS3 is used, a *.VD3 or higher type file must be imported. The application program is available in the ETS3 at *ABB/Room automation, Room Controller*. The devices do not support the closing function of a *BCU code* (ETS3) that can assign the devices using the ETS. This function has no effect on the device. Data can still be read and programmed.

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2.3.2 Connection schematic RC/A 8.2

1 Incoming supply and power supply

The mains supply can be 1-phase, 2-phase or 3-phase (50/60 Hz). The internal power supply for the device and the inserted modules is generated from phase L1. It supply is then routed to the modules. Operation on a 3-phase 230/400 V mains supply is permitted.

Multiple connection of the same phase is not allowed, if it is protected by several miniature circuit-breakers (danger of overload of the neutral conductor!).

2 Connection to the ABB i-bus® KNX

3 Additional incoming supply 24 V DC

Some modules, e.g. 24 V DC blind actuators, require a special incoming supply which is connected directly to the modules. To make the wiring simpler, it is possible to connect a 24 V DC supply here which is then led directly along connecting cables to the modules. The connecting cable is supplied with the modules.

The terminals can carry a maximum continuous current of 8 A.

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4 Manual operation and LED display

To operate the module functions manually, the module must first be selected via the rotary selector switch (Module Select). The module can then be operated via push buttons and the status is displayed via an LED

For further information see: Manual operation and LED disyplay **page 34**

If a module is not selected, the state of the bus voltage can be indicated with the aid of the push buttons:
LED permanently on → Bus voltage OK
LED flashes → Bus voltage not OK

5 Programming button and LED

Please note that the programming button and LED only function when the supply voltage is connected. Background: To ensure that the power consumption of the bus remains low, the device is not supplied by the bus.

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Device technology

2.3.3 Dimensional drawing RC/A 8.2
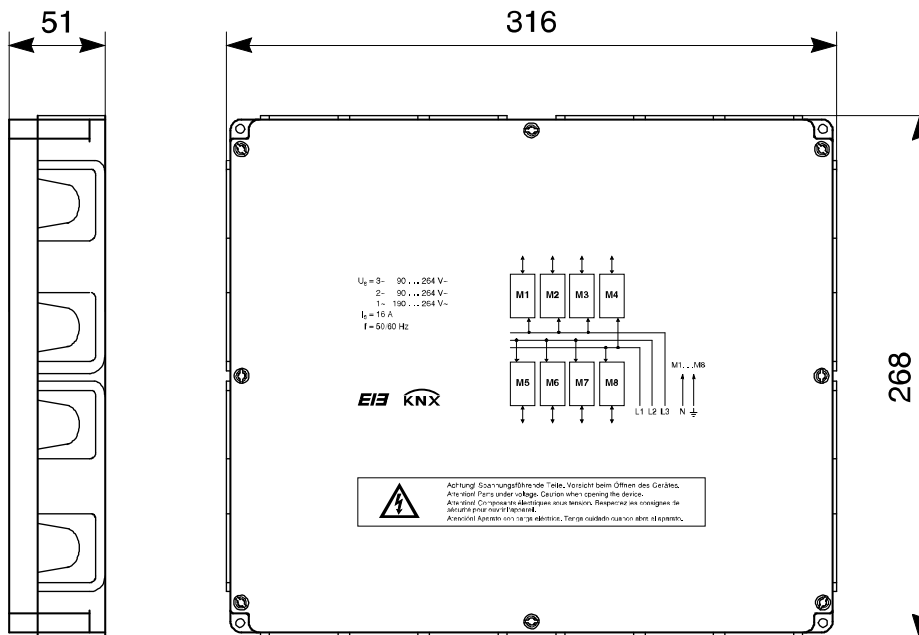
2CDC 072 200 F0009

2.3.4 Overview of the module slots

The device has four or eight module slots which are numbered as M1 to M4 or M8 respectively and when inserted, the module is connected to the mains supply voltage provided that the module requires the voltage for operation.

2CDC 072 187 F0009

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Device technology
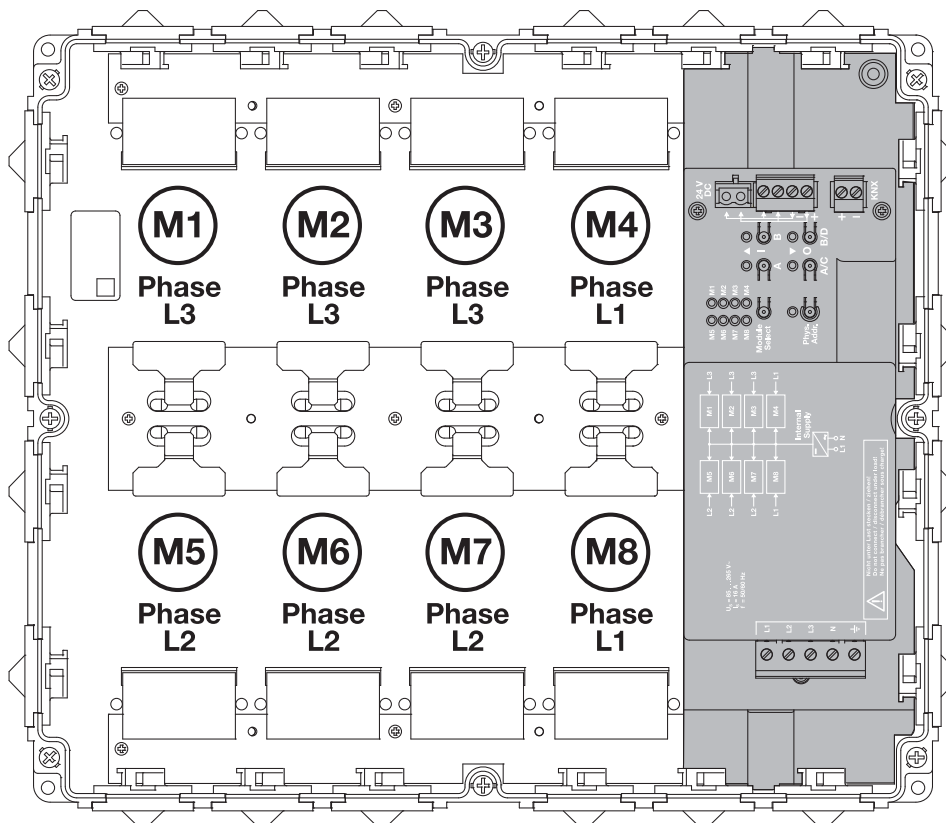
2.4 Assembly and installation

The Room Controller is designed for fixed installation. The device is suitable for surface mounting in any position. It is fixed to an even surface via four screws (supplied). The drill template supplied defines the dimensions of the drill holes.

If the surface is uneven, it must be levelled out e.g. using washers.

Accessibility to the device for the purpose of operation, testing, visual inspection, maintenance and repair must be must be provided (conform to VDE 0100-520).

Supplied state

The device is supplied with the physical address 15.15.255.
The application program is pre-installed. It is therefore only necessary to load group addresses and parameters during commissioning.

However, the complete application program can be reloaded if required. After a change of application program, after an interrupted download or discharge of the device, a longer downtime may result.

Cleaning

If devices become dirty, they can be cleaned using a dry cloth. Should a dry cloth not remove the dirt, the device can be cleaned using a slightly damp cloth and soap solution. Corrosive agents or solutions should never be used.

Maintenance

The device is maintenance-free. No repairs should be carried out by unauthorised personnel if damage occurs, e.g. during transport and/or storage. The warranty expires if the device is opened.

2.4.1 Warning notes

⚠️ ⚡	**Danger**
All the plug-in terminals must be correctly connected before connecting the voltage to the Room Controller basis device.	
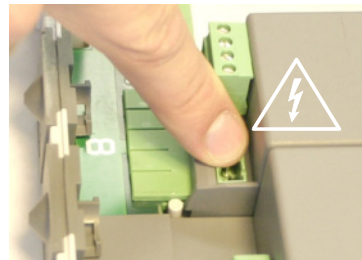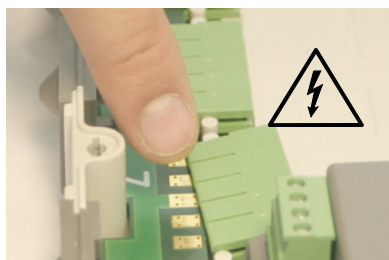
⚠️ ⚡	**Danger**
The installation and mounting may only be carried out by qualified electrical specialists. The Room Controller basis device must be disconnected from the supply during any installation work, in particular	

- when installing or removing modules from the Room Controller basis device,
- before removing the plug-in terminals,

when connecting the outputs.

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2.4.2 Installing the modules

1. Disconnect the Room Controller, Basis Device from the supply.

2. Remove the protective cover from the control line contact surfaces.

3. Insert the module.

4. Snap into place.
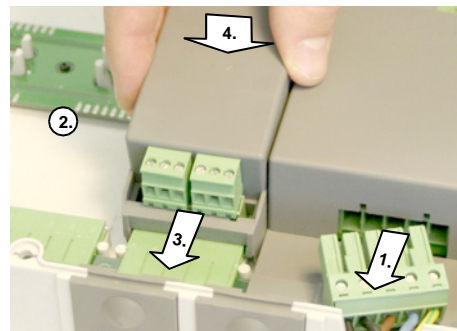
2.4.3 Removing the modules

1. Disconnect the Room Controller, Basis Device from the supply.

2. Unclip the module with a screwdriver.

3. Raise the module slightly and release it from the supply contacts by sliding in the direction of the arrow.
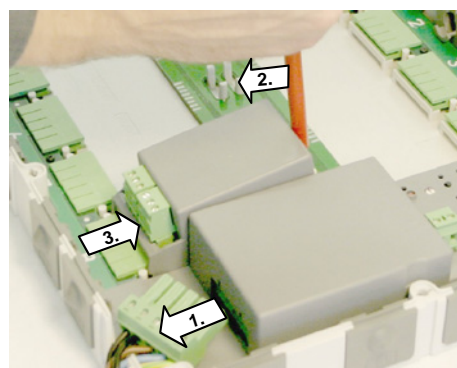
2.4.4 Installation steps

1. Mount the Basis Device and plug in the modules.

2. Connect the end devices.

3. Connect the voltage and test the function in manual mode.

4. Program the device.

Note
The device can only be programmed if the supply voltage is applied.

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Commissioning

3 Commissioning

The central functions of the Room Controller are described in this section. The functions of the modules can be found in separate product manuals.

When calling up the parameters in ETS, additional software, a so-called plug-in is started which is used to carry out both the parameter settings and the assignment of the communication objects.

3.1 Parameters

The Room Controller has a single application program which is used to set to the device function. Programming requires the Engineering Tool Software ETS3 for the RC/A 4.2 and RC/A 8.2.

The application program is available in the ETS at *ABB/Room automation, Room Controller*.

Note
The device can only be programmed if the supply voltage is applied.

The following chapter describes the parameters of the Room Controller using the parameter window. The parameter window features a dynamic structure so that further parameters may be enabled depending on the parameterisation and the function.

The default values of the parameters are underlined, e.g.:

Option: yes
             <u>no</u>

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Commissioning

3.2 The interface
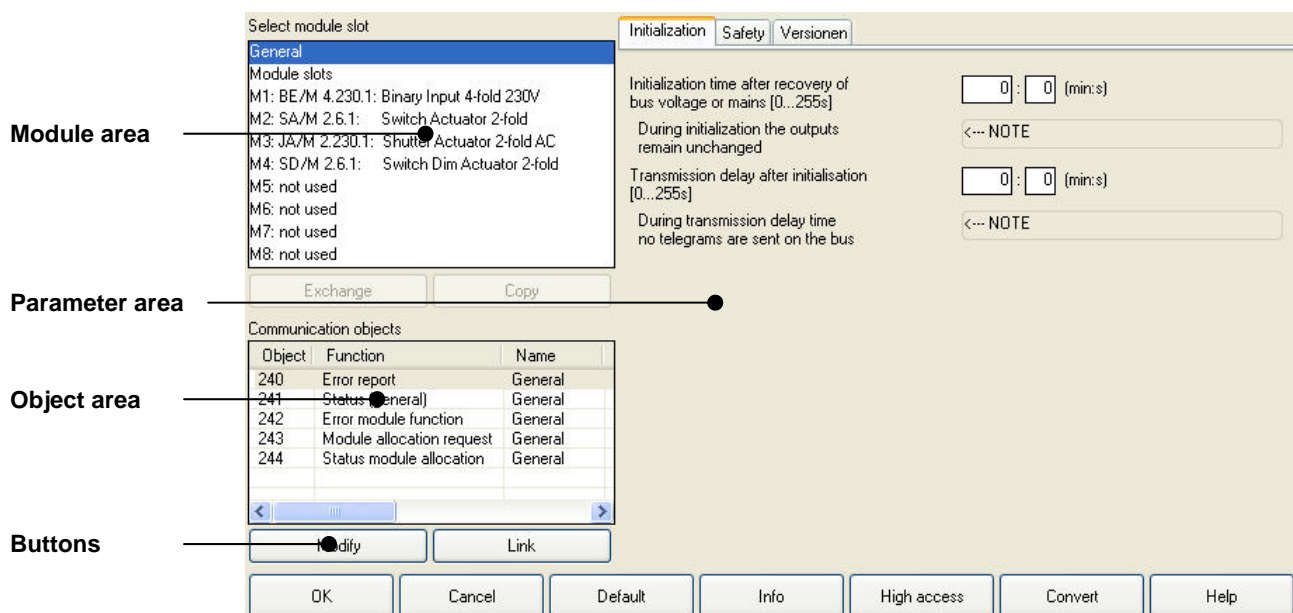
The **module area** provides a quick overview of the module slots. The associated **parameter area** is displayed by clicking on a module slot.

Area *General*: The general parameters of the device are located here (see below).

Area *Module area*: Here you select the module types inserted into the slots.

The object parameters and group address assignments can be edited and reproduced with the *Exchange* and *Copy* buttons.

The **object area** provides an overview of the communication objects and group addresses of the selected module slot. The object properties and group address assignments can be edited with the *Modify* and *Link* buttons at the bottom (alternative: right mouse button).

The **command buttons** have the following function:

OK: Closes the window. Changes are saved.

Cancel: Closes the window. Changes are disregarded (security query)

Default: Restores the default parameter values of a module or channel (security query).

Info: Currently no function assigned.

High access: Enables further parameters if required.

Convert: Used for accepting parameters and group addresses from one device to another within an ETS project.
This is of practical use when updating the software version of the Room Controller. Simply add a device with a new software version to the ETS project and assume the parameters and group address of the previous version using this function.
This function does not allow the acceptance of data from different device types, e.g. from RC/A 8.1 to RC/A 8.2.

Help: Currently no function assigned.

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Commissioning

3.2.1 Assigning group addresses

The *Group address assignment* window opens after clicking on the *Link*. This window is used for linking an object with a group address and for inserting new group addresses.

Linking by Drag & Drop
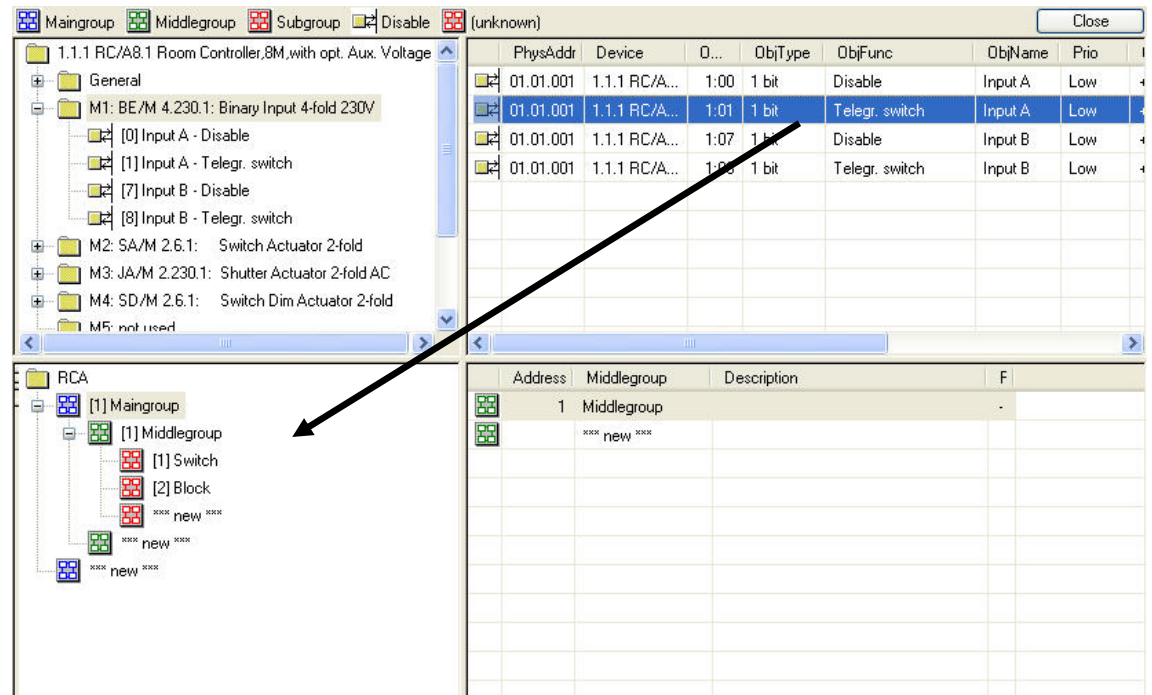
1. Select a module from the top left-hand corner. Its communication objects appear on the right-hand side.

2. Display the group addresses which you wish to link to the communication object via the "+" symbols.

3. Drag the communication object onto the group address:

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Clipboard in the toolbar
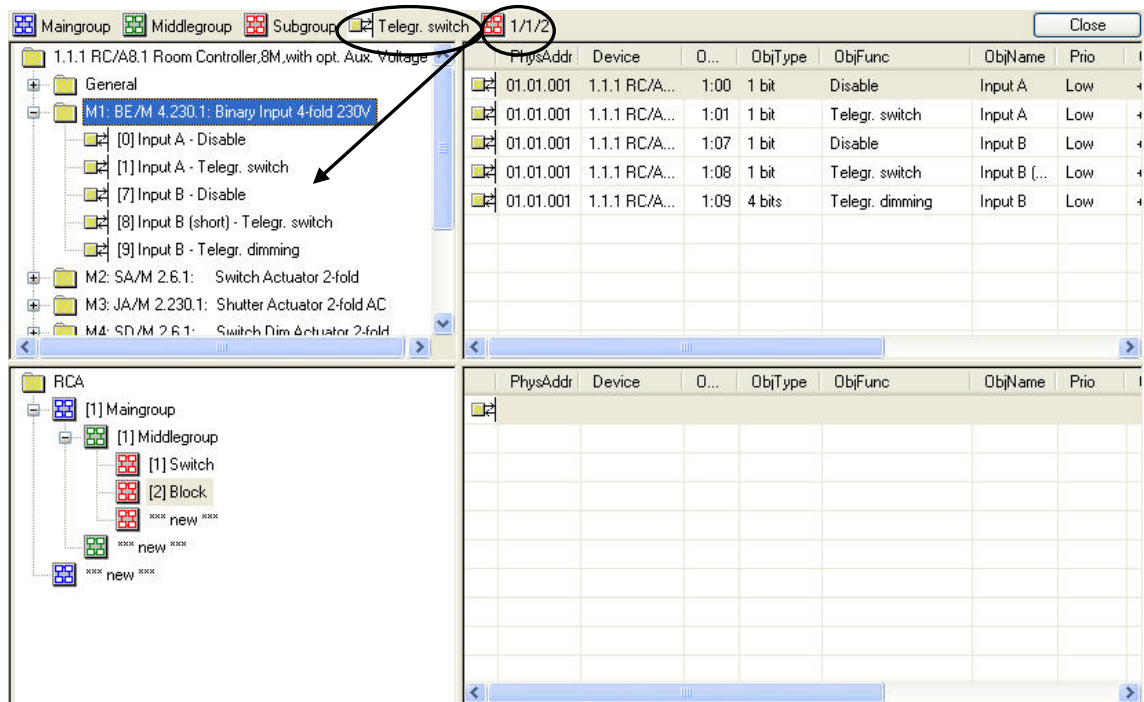
The following procedure is recommended should the same group address be assigned to several communication objects, e.g. with central functions.

Place the communication object or group address into the toolbar above by a double click. From there, you can drag them onto further group addresses or communication objects to link them.

Assigning group addresses
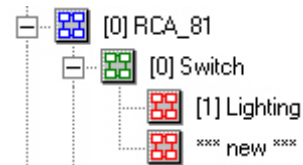
New group addresses can be inserted e.g. by double clicking on the element *** New ***. Alternatively, they can be dragged from the toolbar in the usual way using Drag & Drop as in the ETS program.

Editing a group address

The name and description of a group address can be modified. To do so, select the *Edit* context menu (right mouse button).

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3.2.2 Modifying group addresses

The associations and properties of an object can be modified with the *Modify* button or by double clicking on the communication object.

Note
The easiest way to modify the assignment is by a double click on an assigned group address.

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3.3 Parameter window *Initialization*

The settings for the initialization time and sending delay time are made in this parameter window.

**Initialization time after recovery of
bus voltage or mains [0…255s]**

Options: Time (min:s) in the range [00:00 to 59:00]

This parameter sets how the device behaves directly after recovery of the bus voltage or supply voltage. Unwanted switching operations can thus be prevented on voltage recovery.

> **During initialization the outputs
> remain unchanged.**
>
> <--- NOTE
>
> No communication is possible over the bus during a bus voltage or supply voltage failure. The initialization period starts after bus voltage recovery or internal supply voltage recovery, directly after processor initialization.
>
> Telegrams are only received and evaluated internally within the initialization period. No telegrams are sent and no switching operations are carried out.

**Transmission delay after initialization
[0…255s]**

Options: Time (min:s)

An excessive communication load on the bus can be prevented via this parameter e.g. after a voltage recovery.

> **During transmission delay time
> no telegrams are sent on the bus.**
>
> <--- NOTE
>
> The transmission delay starts in connection with the initialization period. During the transmission delay, no telegrams are sent on the bus. Telegrams are received and evaluated as normal and the outputs are modified.
>
> Status signals are sent on the bus once the transmission delay has elapsed.

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3.4 Parameter window *Safety*

Limit number of telegrams

Options: <u>no</u>
yes

The load on the bus generated by the device can be limited with the limitation on the number of telegrams sent. This limit relates to all telegrams sent by the device.

* *yes:* The following parameters appear:

    Max. number of sent telegrams within period

    Options: 1…<u>20</u>…255

    Period

    Options: <u>50ms</u>/100ms…1s…30s/1min

    This parameter sets the number of telegrams which can be sent by the device within a period. The telegrams are sent a quickly as possible at the start of a period.

Error report, if mains supply (110/230 V AC) fails

Options: <u>no</u>
yes

Note
This parameter is only available in the RC/A 8.1.

Using this parameter, you can set whether an error report is sent, should the 115 or 230 V AC mains supply fail.

* *yes*: During the failure of the mains supply, the communication object *Error signal* is set to the value 1.

Note
The setting *yes* is only useful if the optional 12 V DC auxiliary supply is connected. Otherwise the error message cannot be sent.

Error report, if auxiliary supply (12 V DC) fails

Options: <u>no</u>
yes

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Note
This parameter is only available in the RC/A 8.1.

Using this parameter, you can set whether an error report is sent should the 12 V DC main supply fail.

- *yes*: During the failure of the auxiliary supply, the communication object *Error signal* is set to the value 1. This is only useful if a 12 V DC supply is used.

Note
The setting *yes* is only useful if the 115 or 230 V AC mains supply is connected. Otherwise the error message cannot be sent.

Send object "Error report" cyclically

The device can be monitored for presence on the bus by the cyclical sending of the communication object *Error report* to a central monitoring module.

- *yes:* The communication object is sent cyclically on the bus at the parameterised *Sending cycle time* interval.
  The following parameters appear:

  Transmission cycle time

  Options: [h:min:s]

  Here the time interval at which the *Error report* communication object cyclically sends a telegram is set. It can be specified in hours, minutes and seconds.

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3.5 Communication objects

The following communication objects are available for each Room Controller. Only the numbers of the communication objects vary. In the table, numbers for the 4-fold device are before the forward slash and numbers for the 8-fold devices are after the forward slash.

Number	Name	Object Function	Length	C	R	W	T	U	Priority
240	General	Error report	1 bit	C	R	W	T	U	Low
241	General	Status (general)	1 Byte	C	R	W	T	U	Low
242	General	Error modulefunction	1 Byte	C	R	W	T	U	Low
243	General	Module allocation request	1 bit	C	R	W	T	U	Low
244	General	Status module allocation	14 B...	C	R	W	T	U	Low

No.	Function	Object name	Data type	Flags
120/ 240	**Error report**	**General**	**1 Bit** **DPT 1.005**	**C, R, T**
The device sends a general error message on the bus via this communication object. The following error causes can lead to an error message: - Failure of the 110/230 V mains supply (programmable, for RC/A 8.1 only) - Failure of the 12 V auxiliary supply (programmable, for RC/A 8.1 only) - Internal overtemperature - Error in the module assignment It is possible to parameterise the value that the communication object sends cyclically on the bus, e.g. to a higher level monitoring system. Once all the errors have been rectified, the communication object value is automatically reset to 0 and then sent on the bus. Telegram value: 0 = Device operates correctly 1 = Error report				
121/ 241	**Status (general)**	**General**	**1 byte** **non DPT**	**C, R, T**
This communication object provides detailed information about the state of the device: State of the supply voltage, internal overtemperature, error in module assignment. Structure of the 1 byte value with the RC/A 8.1: Bit 0: Mains supply (110/230 V AC) is not available Bit 1: 2 V supply (optional auxiliary supply) is not available Bit 2: Internal overtemperature Bit 3: Error in the module assignment (Cause: see communication object No. 122/242 *Error module function*) Bit 4: Manual operation is active / not active Structure of the 1 byte value with the RC/A x.2: Bit 0: Internal overtemperature Bit 1: Error in the module assignment (Cause: see communication object No. 122/242 *Error module function*) Bit 2: Manual operation is active / not active The communication object is sent on the bus after a change. Furthermore, it is only automatically sent if the value of the communication object *Error signal* changes. A table with the possible values can be found in the Appendix, page 41.				

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No.	Function	Object name	Data type	Flags
122/ 242	**Error module function**	**General**	**1 byte non DPT**	**C, R, T**

This communication object reports an error with a module slot.

Bit 0 = 1 → Error module slot M1

…

Bit 7 = 1 → Error module slot M8

A bit is set (value = 1) if the function of a module on the corresponding module slot is incorrect or if the communication to the module is disrupted. Possible causes are as follows:

There is a different module in the module slot than that stated in the parameters.

A module slot is empty although a module has been indicated in the parameters.
Possible cause: Please ensure that the protective film over the control cables (base of the module) has been removed.

A module does not respond or the communication to the module is disrupted.

The communication object value can be undefined for a short time directly after bus voltage recovery or programming. A table with the possible values can be found in the Appendix, page 42.

No.	Function	Object name	Data type	Flags
123/ 243	**Module allocation request**	**General**	**1 bit DPT 1.017**	**C, W**

This communication object is used to request the configuration of the inserted modules using the *Status module allocation* communication object.

Telegram value: 0 = no reaction
                        1 = Request *Status module allocation*

No.	Function	Object name	Data type	Flags
124/ 244	**Status module allocation**	**General**	**14 bytes DPT 18.001**	**C, T**

This communication object reports the configuration of the inserted modules. On request, it sends information on the modules inserted into the slots on the bus via the communication object *Module allocation request* (see above).

The 14 byte value contains a defined sequence of characters. Each character represents a defined module type. The first character represents slot M1, the second character slot M2, etc.

Module type		Characters	ASCII code (hex)
	No module	-	2D
SA/M 2.6.1	Switch Actuator, 2-fold, 6AX	A	41
BE/M 4.24.1	Binary Input, 4-fold, Contact Scanning	B	42
BE/M 4.230.1	Binary Input, 4-fold, 230 V AC	C	43
SD/M 2.6.1	Switch/Dim Actuator, 2-fold, 6A	D	44
JA/M 2.230.1	Shutter Actuator Module, 2-fold, 6A, AC	E	45
JA/M 2.24.1	Shutter Actuator Module, 2-fold, 6A, DC	F	46
ES/M 2.230.1	Electronic Actuator, 2-fold	G	47
ES/M 2.24.1	Electronic Actuator, 2-fold DC	H	48
LR/M 1.6.1	Light Controller Module, 1-fold, 6A	I	49
UD/M 1.300.1	Universal Dim Actuator, 1-fold, 300 VA	J	4A
BE/M 4.12.1	Binary Input, 4-fold, 24 VDC	C	4B
SD/M 2.6.2	Switch/Dim Actuator, 2-fold, 6 AX	R	4C
LR/M 1.6.2	Light Controller, 1-fold, 6 AX	M	4D
SA/M 2.16.1	Switch Actuator, 2-fold, 16 A, floating.	N	4E

ABB i-bus® KNX
Planning and application

4 Planning and application

In this section, you will find useful instructions concerning the planning and application of the Room Controller.

4.1 Fusing and line protection RC/A 8.x

The guidelines and requirements of VDE 0100 apply to the Room Controller – as for all other KNX devices. Line protection is stipulated in this standard amongst other safety arrangements.

Line protection

The mains supply of the Room Controller must be fused with maximum 16 A. For a 3-phase mains supply, this can be carried out, e.g. via a 4-pole circuit-breaker (see diagram on the left). Alternatively, the phases can be fused individually. In applications in which the defined isolation of the voltage is stipulated, this can be carried out by an additional isolating switch (see diagram on the right).

The following examples explain line protection when using 3-phase mains supply:
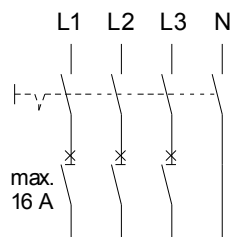
Line protection of the individual phases as well as a disconnecting switch for isolating the supply
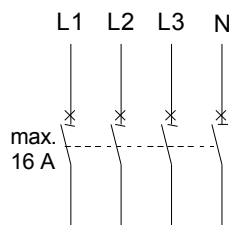
All-pole disconnecting miniature circuit breaker

Fault current protection

Fault current protection is carried out in the Room Controller via an all-pole RCCB which disconnects the complete device from the supply in the event of a fault.

4.2 Incoming supply

The mains supply can be provided by 3-phases, 2-phases or 1-phase:
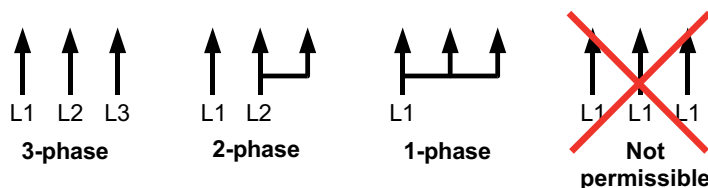
The same phase must not be connected in parallel more than once (e.g. 3 x 16 A). Otherwise the current of the neutral conductor would exceed the rated current.

ABB i-bus® KNX
Planning and application

4.3 Manual operation and LED display
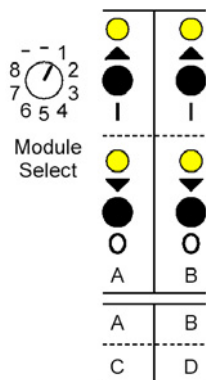
The manual operation of the module function is carried out via a rotary selector switch (Module Select), 4 push buttons and 4 LEDs (yellow).

1. Selection of the module slot (M1…M8) via the rotary selector switch: The current status of the module is indicated by the LED. If a button has not been pressed for longer than 1 minute, manual operation and the LED display are switched off automatically.

2. Operation via the push buttons

In the case of 2-channel modules, the two left-hand push buttons/LEDs are assigned to Channel A while the other two are assigned to Channel B. With 4-channel modules, the two upper push buttons/LEDs are assigned to channels A and B while the two lower push buttons/LEDs are assigned to channels C and D.

A distinction is made in some modules between a short (< 0.5 s) and long (> 0.5 s) push button action. It is therefore possible e.g. to switch or dim the lighting.

If a module is not selected, the state of the bus voltage can be determined with the push buttons:

LEDs switched on = Bus voltage OK
LEDs flash = Bus voltage not OK

Manual operation is not possible

If all 4 LEDs flash when a module slot has been selected, this indicates that the module has not been recognised. Possible reasons for this are:

Cause		Possible solution
1.	Wrong module type programmed.	The Room Controller has already been programmed and in the parameters a module type other than the inserted type has been programmed. Reprogram the Room Controller with the correct parameters.
2.	Communication with the module is disrupted.	Remove the blue protective cover from the control cable contacts in the basis device before inserting the module.
3.	The module is unknown.	The software in the Room Controller does not recognise the module type. Update the software in the Room Controller with the latest version (programming with ETS).
4.	The module is faulty.	This is unlikely but cannot be ruled out. Replace the module by another one of the same type (same order number). Should this function, it must be assumed that the module is faulty.

If the LEDs do not display anything at all, it is possible that the supply voltage has failed. You can check this by pressing the programming button: If the programming LED does not light up, the supply to the device is interrupted. Remember to switch the programming LED off again.

Once the Room Controller has been programmed, the manual operation function can be influenced by the parameters of the module (e.g. travel times of the blinds). A manual operation can change communication object values, e.g. status objects.

4.4 Reaction on bus voltage failure and recovery

Reaction on bus voltage failure

The behaviour of the modules at bus voltage failure can be parameterised. The function of the basis device is retained provided that the supply voltage is present.

If it has been set accordingly in the parameters, the Room Controller can continue to function normally after bus voltage failure and the functions in the room are retained.

Example
Conventional push buttons are connected to a Room Controller via binary input modules. The Room Controller also regulates the lighting in the room. After bus voltage failure, the lighting can still be operated since the Room Controller is not supplied by the bus.

ABB i-bus® KNX
Planning and application

Reaction on bus voltage recovery

The behaviour of the modules is programmable. The status telegrams of the Room Controller are sent if a signal is present.

Reaction on supply voltage failure

The supply voltage has failed if there is a failure of both the 110/230 V AC supply and the 12 V DC auxiliary supply.

Should the supply voltage fail, the Room Controller cannot function.

The output state of most of the modules is programmable so that a defined state can be created in each case.

Further information can be found in the product manual of the respective module.

Note
Should the supply voltage fail, some of the stored operating states of the modules may get lost (e.g. count values, stored scene values or the current position). They are automatically reset during normal operation or overwritten by the parameterised values.

Reaction on supply voltage recovery

The behaviour is identical to the behaviour on bus voltage recovery and can be configured for each module.

4.5 Behaviour after programming

After programming is complete the device behaves just as after a bus voltage recovery. The behaviour is programmable.

ABB i-bus® KNX
Overview of the modules and accessories

5 Overview of the modules and accessories

5.1 Binary inputs

The binary input modules are used for the connection of switches or push buttons or for reading out technical contacts.
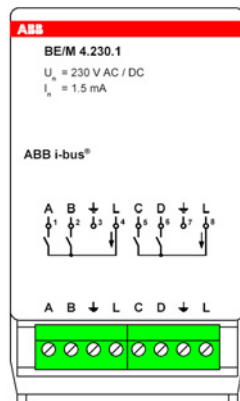
Binary Input, 4-fold, 230 V AC/DC

Used for detecting 230 V signals (AC or DC). The mains voltage is made available at two terminals. It can be optionally used as scanning voltage. The switching threshold for the ON signal is approx. 180 V.

2 cable entries included on delivery.
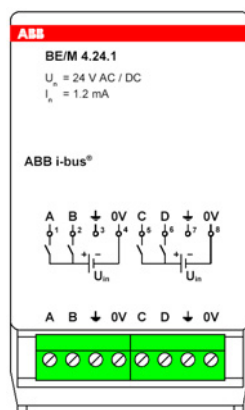
Binary Input, 4-fold, 24 V AC/DC

Used for detecting 24 V signals (AC or DC) which are made available via an external power source. The switching threshold is approx. 9 V.

2 cable entries included on delivery.
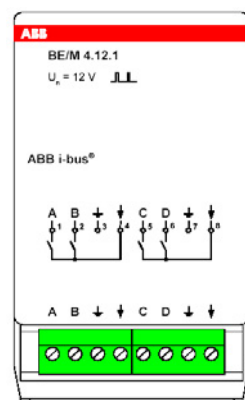
Binary Input Module, 4-fold, Contact Scanning

Used for reading out floating contacts. The scanning voltage is made available by the device.

2 cable entries included on delivery.

ABB i-bus® KNX
Overview of the modules and accessories

5.2   Switch actuators

SA/M 2.6.1

$U_n = 250 V\sim$
$I_n = 6 AX$
C-Load
$\cos\varphi = 0.6$

ABB i-bus®
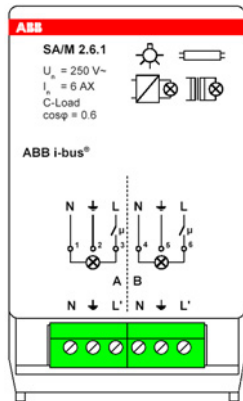
Switch Actuator Module, 2-fold, 6 AX

Switches two loads with max. 6 A continuous current. Features a special relay for high inrush currents and is therefore also suitable for switching capacitive loads.

2 cable entries included on delivery.

SA/M 2.16.1

$U_n = 250 V\sim$
$I_n = 16 A$
$\cos\varphi = 0.6$

ABB i-bus®
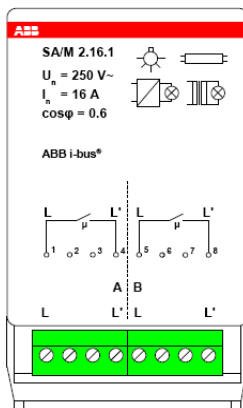
Switch Actuator Module, 2-fold, 16 A, floating contacts

Switches two loads with max. 16 A continuous current via two floating relays.

Important: The voltage to be switched (supply) must be applied directly to the module.

2 cable entries included on delivery.

5.3   Blind actuators

JA/M 2.230.1

$U_n = 250 V\sim$
$I_n = 6 A$

ABB i-bus®
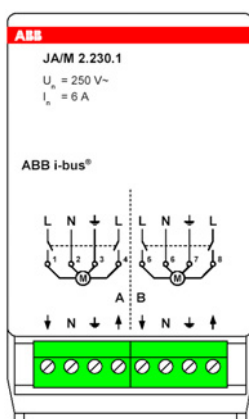
Shutter Actuator Module, 2-fold, 230 V AC

For controlling 2 independent blind or roller shutters with 230 V AC. Modules include special functions, e.g. *Move to position* and *Automatic sun screen* (blind control module).

2 cable entries included on delivery.

ABB i-bus® KNX
Overview of the modules and accessories
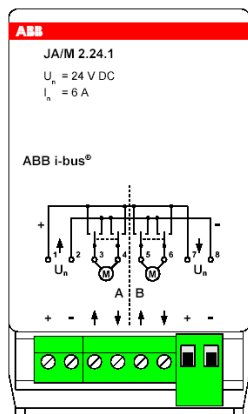
Shutter Actuator Module, 2-fold, 24 V DC

For controlling 2 independent blind or roller shutters with 24 V DC. Modules include special functions, e.g. *Move to position*, *Automatic sun screen* (blind control module).

2 cable entries included on delivery.

5.4 Dim actuators and light controllers
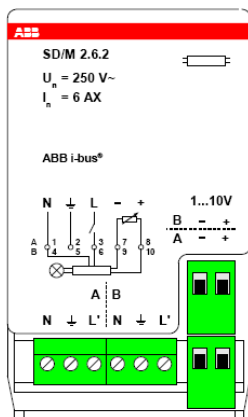
Switch/Dim Actuator Module, 2-fold, 6 AX

For switching and dimming two groups of luminaries in connection with electronic ballasts via a 1…10 V control output.

2 cable entries included on delivery.
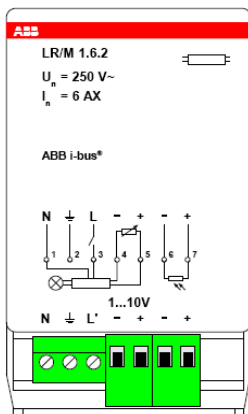
Light Control Module, 1-fold, 6 AX

For switching and dimming of one luminary group in connection with electronic ballasts via a 1…10 V control output.

Can be used for constant lighting control in connection with a Light Sensor LF/U 1.1.

Important: The Light Sensor LF/U 1.1 cannot be used!

1 cable entry included on delivery.

ABB i-bus® KNX
Overview of the modules and accessories
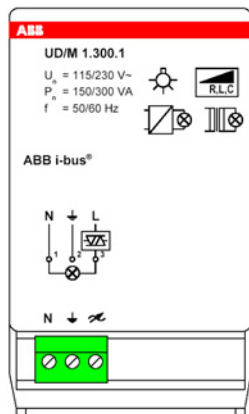
Universal Dim Actuator, 1-fold, 300 VA

For switching and dimming incandescent lamps, 230 V halogen lamps or low voltage halogen lamps on wound or electronic transformers (automatic load detection). Integrated fault detection. Can be integrated in a constant lighting control function with a light controller (slave mode).

The output capacity is 300 VA at 230 V AC or 150 VA at 110 V AC. The mains frequency is 50 or 60 Hz.

1 cable entry included on delivery.

5.5   Electronic switch actuators
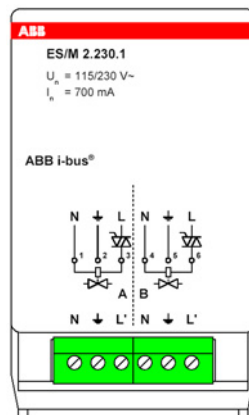
Electronic Switch Actuator Module, 2-fold, 230 V AC

Has two overload-proof outputs for controlling heating systems and cooling ceilings via electrothermal valve drives. The device can be operated with a voltage of 110/230 V AC.

2 cable entries included on delivery.
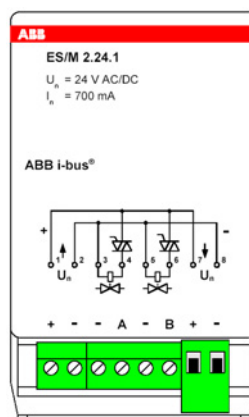
Electronic Switch Actuator Module, 2-fold, 24 V DC

Has two overload-proof outputs for controlling heating systems and cooling ceilings via electrothermal valve drives. The device is supplied directly with a voltage of 24 V DC..

2 cable entries included on delivery.

ABB i-bus® KNX
Appendix

A Appendix

A.1 Value table for communication object *Status* (General)

Table of values for RC/A 8.1

Status value		Manual operation is active	Error in the module assignment	Internal overtemperature	12 V DC supply not available	Mains supply not available
0	00					
1	01					■
2	02				■	
3	03				■	■
4	04			■		
5	05			■		■
6	06			■	■	
7	07			■	■	■
8	08		■			
9	09		■			■
10	0A		■		■	
11	0B		■		■	■
12	0C		■	■		
13	0D		■	■		■
14	0E		■	■	■	
15	0F		■	■	■	■
16	10	■				
17	11	■				■
18	12	■			■	
19	13	■			■	■
20	14	■		■		
21	15	■		■		■
22	16	■		■	■	
23	17	■		■	■	■
24	18	■	■			
25	19	■	■			■
26	1A	■	■		■	
27	1B	■	■		■	■
28	1C	■	■	■		
29	1D	■	■	■		■
30	1E	■	■	■	■	
31	1F	■	■	■	■	■

empty = value 0;   ■ = value 1, applicable

Table of values for RC/A 4.2 and RC/A 8.2

Status value		Manual operation is active	Error in the module assignment	Internal overtemperature
0	00			
1	01			■
2	02		■	
3	03		■	■
4	04	■		
5	05	■		■
6	06	■	■	
7	07	■	■	■

empty = value 0;   ■ = value 1, applicable

ABB i-bus® KNX
Appendix

A.2 Value table for communication object *Error module function*

Error code value	Hex	Module slot 8	Module slot 7	Module slot 6	Module slot 5	Module slot 4	Module slot 3	Module slot 2	Module slot 1
0	00								
1	01								■
2	02							■	
3	03							■	■
4	04						■		
5	05						■		■
6	06						■	■	
7	07						■	■	■
8	08					■			
9	09					■			■
10	0A					■		■	
11	0B					■		■	■
12	0C					■	■		
13	0D					■	■		■
14	0E					■	■	■	
15	0F					■	■	■	■
16	10				■				
17	11				■				■
18	12				■			■	
19	13				■			■	■
20	14				■		■		
21	15				■		■		■
22	16				■		■	■	
23	17				■		■	■	■
24	18				■	■			
25	19				■	■			■
26	1A				■	■		■	
27	1B				■	■		■	■
28	1C				■	■	■		
29	1D				■	■	■		■
30	1E				■	■	■	■	
31	1F				■	■	■	■	■
32	20			■					
33	21			■					■
34	22			■				■	
35	23			■				■	■
36	24			■			■		
37	25			■			■		■
38	26			■			■	■	
39	27			■			■	■	■
40	28			■		■			
41	29			■		■			■
42	2A			■		■		■	
43	2B			■		■		■	■
44	2C			■		■	■		
45	2D			■		■	■		■
46	2E			■		■	■	■	
47	2F			■		■	■	■	■
48	30			■	■				
49	31			■	■				■
50	32			■	■			■	
51	33			■	■			■	■
52	34			■	■		■		
53	35			■	■		■		■
54	36			■	■		■	■	
55	37			■	■		■	■	■
56	38			■	■	■			
57	39			■	■	■			■
58	3A			■	■	■		■	
59	3B			■	■	■		■	■
60	3C			■	■	■	■		
61	3D			■	■	■	■		■
62	3E			■	■	■	■	■	
63	3F			■	■	■	■	■	■
64	40		■						
65	41		■						■
66	42		■					■	
67	43		■					■	■
68	44		■				■		
69	45		■				■		■
70	46		■				■	■	
71	47		■				■	■	■
72	48		■			■			
73	49		■			■			■
74	4A		■			■		■	
75	4B		■			■		■	■
76	4C		■			■	■		
77	4D		■			■	■		■
78	4E		■			■	■	■	
79	4F		■			■	■	■	■
80	50		■		■				
81	51		■		■				■
82	52		■		■			■	
83	53		■		■			■	■
84	54		■		■		■		
85	55		■		■		■		■

Error code value	Hex	Module slot 8	Module slot 7	Module slot 6	Module slot 5	Module slot 4	Module slot 3	Module slot 2	Module slot 1
86	56		■		■		■	■	
87	57		■		■		■	■	■
88	58		■		■	■			
89	59		■		■	■			■
90	5A		■		■	■		■	
91	5B		■		■	■		■	■
92	5C		■		■	■	■		
93	5D		■		■	■	■		■
94	5E		■		■	■	■	■	
95	5F		■		■	■	■	■	■
96	60		■	■					
97	61		■	■					■
98	62		■	■				■	
99	63		■	■				■	■
100	64		■	■			■		
101	65		■	■			■		■
102	66		■	■			■	■	
103	67		■	■			■	■	■
104	68		■	■		■			
105	69		■	■		■			■
106	6A		■	■		■		■	
107	6B		■	■		■		■	■
108	6C		■	■		■	■		
109	6D		■	■		■	■		■
110	6E		■	■		■	■	■	
111	6F		■	■		■	■	■	■
112	70		■	■	■				
113	71		■	■	■				■
114	72		■	■	■			■	
115	73		■	■	■			■	■
116	74		■	■	■		■		
117	75		■	■	■		■		■
118	76		■	■	■		■	■	
119	77		■	■	■		■	■	■
120	78		■	■	■	■			
121	79		■	■	■	■			■
122	7A		■	■	■	■		■	
123	7B		■	■	■	■		■	■
124	7C		■	■	■	■	■		
125	7D		■	■	■	■	■		■
126	7E		■	■	■	■	■	■	
127	7F		■	■	■	■	■	■	■
128	80	■							
129	81	■							■
130	82	■						■	
131	83	■						■	■
132	84	■					■		
133	85	■					■		■
134	86	■					■	■	
135	87	■					■	■	■
136	88	■				■			
137	89	■				■			■
138	8A	■				■		■	
139	8B	■				■		■	■
140	8C	■				■	■		
141	8D	■				■	■		■
142	8E	■				■	■	■	
143	8F	■				■	■	■	■
144	90	■			■				
145	91	■			■				■
146	92	■			■			■	
147	93	■			■			■	■
148	94	■			■		■		
149	95	■			■		■		■
150	96	■			■		■	■	
151	97	■			■		■	■	■
152	98	■			■	■			
153	99	■			■	■			■
154	9A	■			■	■		■	
155	9B	■			■	■		■	■
156	9C	■			■	■	■		
157	9D	■			■	■	■		■
158	9E	■			■	■	■	■	
159	9F	■			■	■	■	■	■
160	A0	■		■					
161	A1	■		■					■
162	A2	■		■				■	
163	A3	■		■				■	■
164	A4	■		■			■		
165	A5	■		■			■		■
166	A6	■		■			■	■	
167	A7	■		■			■	■	■
168	A8	■		■		■			
169	A9	■		■		■			■
170	AA	■		■		■		■	
171	AB	■		■		■		■	■

Error code value	Hex	Module slot 8	Module slot 7	Module slot 6	Module slot 5	Module slot 4	Module slot 3	Module slot 2	Module slot 1
172	AC	■		■		■	■		
173	AD	■		■		■	■		■
174	AE	■		■		■	■	■	
175	AF	■		■		■	■	■	■
176	B0	■		■	■				
177	B1	■		■	■				■
178	B2	■		■	■			■	
179	B3	■		■	■			■	■
180	B4	■		■	■		■		
181	B5	■		■	■		■		■
182	B6	■		■	■		■	■	
183	B7	■		■	■		■	■	■
184	B8	■		■	■	■			
185	B9	■		■	■	■			■
186	BA	■		■	■	■		■	
187	BB	■		■	■	■		■	■
188	BC	■		■	■	■	■		
189	BD	■		■	■	■	■		■
190	BE	■		■	■	■	■	■	
191	BF	■		■	■	■	■	■	■
192	C0	■	■						
193	C1	■	■						■
194	C2	■	■					■	
195	C3	■	■					■	■
196	C4	■	■				■		
197	C5	■	■				■		■
198	C6	■	■				■	■	
199	C7	■	■				■	■	■
200	C8	■	■			■			
201	C9	■	■			■			■
202	CA	■	■			■		■	
203	CB	■	■			■		■	■
204	CC	■	■			■	■		
205	CD	■	■			■	■		■
206	CE	■	■			■	■	■	
207	CF	■	■			■	■	■	■
208	D0	■	■		■				
209	D1	■	■		■				■
210	D2	■	■		■			■	
211	D3	■	■		■			■	■
212	D4	■	■		■		■		
213	D5	■	■		■		■		■
214	D6	■	■		■		■	■	
215	D7	■	■		■		■	■	■
216	D8	■	■		■	■			
217	D9	■	■		■	■			■
218	DA	■	■		■	■		■	
219	DB	■	■		■	■		■	■
220	DC	■	■		■	■	■		
221	DD	■	■		■	■	■		■
222	DE	■	■		■	■	■	■	
223	DF	■	■		■	■	■	■	■
224	E0	■	■	■					
225	E1	■	■	■					■
226	E2	■	■	■				■	
227	E3	■	■	■				■	■
228	E4	■	■	■			■		
229	E5	■	■	■			■		■
230	E6	■	■	■			■	■	
231	E7	■	■	■			■	■	■
232	E8	■	■	■		■			
233	E9	■	■	■		■			■
234	EA	■	■	■		■		■	
235	EB	■	■	■		■		■	■
236	EC	■	■	■		■	■		
237	ED	■	■	■		■	■		■
238	EE	■	■	■		■	■	■	
239	EF	■	■	■		■	■	■	■
240	F0	■	■	■	■				
241	F1	■	■	■	■				■
242	F2	■	■	■	■			■	
243	F3	■	■	■	■			■	■
244	F4	■	■	■	■		■		
245	F5	■	■	■	■		■		■
246	F6	■	■	■	■		■	■	
247	F7	■	■	■	■		■	■	■
248	F8	■	■	■	■	■			
249	F9	■	■	■	■	■			■
250	FA	■	■	■	■	■		■	
251	FB	■	■	■	■	■		■	■
252	FC	■	■	■	■	■	■		
253	FD	■	■	■	■	■	■		■
254	FE	■	■	■	■	■	■	■	
255	FF	■	■	■	■	■	■	■	■

■ = error in module function

ABB i-bus® KNX
Appendix

A.3 Ordering Information

Basis devices and modules

Short description	Description	Order code	bbn 40 16779 EAN	Price group	Weight 1 pc. [kg]	Packaging [pc.]
Basis Devices						
RC/A 4.2	Room Controller, Basis Device for 4 Modules, SM	2CDG 110 104 R0011	**67647 2**	26	0.9	1
RC/A 8.1	Room Controller, Basis Device for 8 Modules, with optional auxiliary supply, SM	2CDG 110 001 R0011	**58213 1**	26	1.48	1
RC/A 8.2	Room Controller, Basis Device for 8 Modules, SM	2CDG 110 106 R0011	**68126 1**	26	1.45	1
Modules						
BE/M 4.230.1	Binary Input, 4-fold, 230 V AC/DC	2CDG 110 005 R0011	**58311 4**	26		1
BE/M 4.24.1	Binary Input, 4-fold, 24 V AC/DC	2CDG 110 006 R0011	**58312 1**	26		1
BE/M 4.12.1	Binary Input Module, 4-fold, Contact Scanning	2CDG 110 007 R0011	**58313 8**	26		1
SA/M 2.6.1	Switch Actuator Module, 2-fold, 6 AX	2CDG 110 002 R0011	**58314 5**	26		1
SA/M 2.16.1	Switch Actuator Module, 2-fold, 16 A, floating	2CDG 110 100 R0011	**68158 2**	26		1
JA/M 2.230.1	Shutter Actuator Module, 2-fold, 230 V AC	2CDG 110 003 R0011	**58315 2**	26		1
JA/M 2.24.1	Shutter Actuator Module, 2-fold, 24 V DC	2CDG 110 004 R0011	**58316 9**	26		1
SD/M 2.6.2	Switch/Dim Actuator Module, 2-fold, 6 AX	2CDG 110 107 R0011	**68066 0**	26		1
LR/M 1.6.2	Light Controller Module, 1-fold, 6 AX	2CDG 110 108 R0011	**68067 7**	26		1
UD/M 1.300.1	Universal Dim Actuator Module, 1-fold, 300 VA	2CDG 110 012 R0011	**58360 2**	26		1
ES/M 2.230.1	Electronic Switch Actuator Module, 2-fold, 230 V	2CDG 110 013 R0011	**58361 9**	26		1
ES/M 2.24.1	Electronic Switch Actuator Module, 2-fold, 24 V	2CDG 110 014 R0011	**58362 6**	26		1

ABB i-bus® KNX
Appendix

A.4 **Notes**

Contact

ABB STOTZ-KONTAKT GmbH

Eppelheimer Straße 82
69123 Heidelberg, Germany
Phone: +49 6221 701 607
Fax: +49 6221 701 724
E-Mail: knx.marketing@de.abb.com

Further information and local contacts:
www.abb.com/knx

Order Number 2CDC 514 054 D0202 (12.10)

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